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Market Stability in Adam Smith: Competitive Process and Institutions

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Summary

Based on the new way of studying the work of Adam Smith in greater depth, with greater attention being paid to the use and context of his language, this investigation examines the theory of competitive exchange described in *The Wealth of Nations*, with the aim of bringing new contributions to the field of decision-making beyond the utilitarian theoretical framework. We have found an exchange process with principles of behaviour that are very different to those described in the traditional literature, principally through the leading role of both the cognitive process of decision-making, and of institutions. This work concludes that natural price is a rule of equivalence that guarantees market consistency and that the cognitive process of its participants is described as a mechanism for forming expectations based on institutions outside the market. These conclusions allow us to redefine the hypotheses of Adam Smith's system of price determination.

JEL classification: B12, B 31, D02, D4, D83.

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1. Introduction

There has been much discussion in the literature regarding Smith's theory of price formation, principally through investigations that have centred on the study of his theories of value (i.e. Meek 1973; Aspromourgos 1996; Dooley 2006), or on the determination of rates of profit, wages or rent (i.e. Hollander 1987; O'Brien 1975). The result has been a reading from the point of view of labour value or production costs. A variety of studies (Cartelier 1976; Arena 1978; Benetti 1981) pointed out the problems with these interpretations. Tribe (1999) summarises this change in direction in the literature as a greater attention to language, its use and context. Smith's discourse demonstrates the influence that others have on the welfare and decisions made relating to a particular subject. The result of this has been a necessary revision of the concept of the individual in Adam Smith's project. In the case of *The Theory of Moral Sentiments* (henceforth referred to as TMS), clarity is a unanimous feature amongst the commentators with which Smith proposes the mechanism of an impartial spectator as criteria for the determination of the morality and justice of a society. *The Wealth of Nations* (hereafter, WN) also demonstrates the importance of others in our welfare, although the objectives of this book are more in keeping with the socioeconomic consequences of applying different institutions to the individual in each stage of development (Rosenberg 1960; Heilbroner 1982; Muller 1993; Tajima 2007).

There is not simply a critical revision of the literature on Adam Smith, but also new proposals, at least with reference to exchange. On one hand, Brown (1994) presents price theory from the point of view of the components of the income from the value theory which decouples the competitive market from the assignation of resources. Witztum (2008) uses various examples –barter and labour market– to analyse the role of moral evaluation in exchange and its consequences for economic states. Schliesser (2005) redirects the discussion on natural price towards the obstacles which prevent market prices from reaching natural price. Peil (2009) interprets Smith's prices through the flexible rules of direction which are granted by the perspective of the individual behaviour towards sympathy. In spite of the important contributions of these new approaches to the treatment of the market, there is still not a consistent explanation of the specific role granted by Smith to natural price in the exchange mechanism in a commercial society, nor one of the cognitive process which allows individuals to participate in exchange, despite being, in all opinions, a necessary condition for the required movement of resources in areas of convergence.

Our proposal about the issue of Adam Smith's price mechanism requires the search for a common reference in order to participate in an exchange, because when market is addressed from this point of view it has a different appearance from that of the literature on Smith's theory of price. However, these rules are not linked to his mechanism of moral analysis but rather to a mechanism of the progress of opulence. Specifically, we demonstrate that Adam Smith's natural price is a rule of equivalence which is required by the agents as a reference for their decisions and whose function is to guarantee the consistency of exchange. To achieve this we show the cognitive process, which allows individuals to determine natural rates, as a mechanism of forming expectations on the basis of institutions which differ from the market. Using this cornerstone, Smith proposes a price system based on an adjustment of plans founded on expectations and whose hypotheses are different from those which are traditionally described by commentators. This task is added to by the literature which evokes the decisive influence, granted by Adam Smith, of the institutions over the behaviour of individuals.[1]

2. The rule of exchange as the basis of the market

The Theory of Moral Sentiments and *Lectures on Jurisprudence* describe the historical process of the emergence of perfect rights (justice, possession and injury), which also require rules of justice to organise and stabilise commonly held moral judgements. For Smith, free

[1] This paper expands upon the literature that reads WN as showing the impact of the economic institutions on the individual with the objective of shaping the 'system of natural freedom'. We are based on the work of Rosenberg (1960). Whilst he does not specifically discuss Adam Smith's theory of prices, this article is used as a method of investigation into questions such as religion and market structure (see Muller 1998; Tajima 2007; Leathers and Raines 2008).

will does not guarantee respect for justice, and every social relationship therefore requires rules.[2] Using self-interest as the basis of the motivation for action, Smith proposes that sympathy is the instrument by which motivation can be judged; the rule of justice is the sympathy of an impartial spectator who shares an expectation of the use of an object.[3] Reference to this moral person explains the process of socialisation (Heilbroner 1982).

This situation has served as a base on which to sustain the hypothesis of natural price as just price determined by the mechanism of the impartial spectator (Young 1985; Stabile 1997).[4] Ron (2008) also considers the same instruments (sympathy and impartial spectator) utilised in the process of socialisation, although now for the purpose of determining the formation of the exchange value, by means of three measurements (Real prices, Natural prices and Market prices) which represent the different ways of evaluating economic transactions from a moral point of view. In this way Smith would show that only a system where prices generated by the market seem morally justifiable can satisfy the needs of a commercial society. However, not all of Smith's rules involve an impartial spectator. The relationship of exchange is one of specific social exchange: (i) the symmetrical position of the exchange does not leave room for sympathy in the knowledge and agreement process, (ii) exchange is a relationship between physical quantities (equivalence) while the impartial spectator regulates passions. In WN Smith inquires about the impact of the economic institutions –i.e. those which affect the "general conditions of society"– on the socialised individual. Therefore, the market is not a result of social organisation, but is a social place and, as a result, requires rules to guarantee these social relationships. However these do not form part of a mechanism of moral analysis, adding to sympathy, but of a mechanism of the progress of opulence.

Hurtado (2003) proposes an investigation into the management of an economic agent (a conceptual construct required by the individual to understand his economic activity) in place of the moral person; an agent who can lay down equivalents rather than judgements. Berthoud (2002) suggests that the standard is labour (the hardship associated with human work in every time and place). The universal required for measuring value is found within each individual and thus there can be no error when evaluating price. The problem with this interpretation is money, which alters the nominal terms of every equivalent. Smith specifically explains that the time taken for the labour cannot be used as a measurement because a mercantile society requires a simpler estimation which labour cannot supply. It is important to point out that natural prices are born out of the impracticability of the agents' attempts to use labour as a measurement of value. Money is an institution created to facilitate exchange because, given its widespread use, it is more natural to estimate value in monetary terms than an exchange based on labour value or on barter. Smith seeks a method

[2] The absence of external restrictions and freedom of actions based on self-interest are not sufficient in WN to guarantee social harmony (Rosenberg 1960).

[3] "Occupation seems to be well founded when the spectator can go along with my possession of the object, and approve me when I defend my possession by force. If I have gathered some wild fruit it will appear reasonable to the spectator that I should dispose of it as I please." (Smith [1762-6] 1978, 459).

[4] Virtue does not exogenously influence economic decisions since it is part of the protagonist which Smith uses to develop his analysis (McCloskey 2008). Therefore, WN does not re-socialise the individual – the task was already accomplished in TMS.

that does not put obstacles in the way of the natural tendency to exchange and therefore describes that value as being *natural*.

> Every commodity, besides, is more frequently exchanged for, and thereby compared with, other commodities than with labour. It is more natural, therefore, to estimate its exchangeable value by the quantity of some other commodity than by that of the labour which it can purchase. (Smith [1776] 1976, 49).

Smith outlines a progressive change in mercantile relationships; the introduction of money as well as specialisation and accumulation (the direct results of self-interest) increases the social distance between individuals (Stabile 1997).[5] But, as we have already commented, the rules of "average just price", emotional identification or the equivalence of the labour commanded are ineffective in this mercantile field.

For Smith the issue is the articulation of the individual in the market process and for this reason he maintains the same research objectives: rules and individual motivation. In this way, Adam Smith does not address this company by means of a search for market laws as principles or relationships which could explain the price formation. The methodology used in order to understand the exchange is completely different. Once the exposition on the origin and use of money has finished (chapter IV of book I), the author emphasizes his research objective by dealing with the issue of competitive exchange in the following three chapters.

What are the rules which men naturally observe in exchanging them either for money or for one another, I shall now proceed to examine. These rules determine what may be called the relative or exchangeable value of goods. (Smith [1776] 1976, 46).

There are no laws to identify, only rules which the subjects follow when they act in the market. There is no unique and certain final result which allows the consideration of a greater rigour in the investigation. For Smith, the individuals need to follow a common reference or rule in order to participate in an exchange where the distance between those who participate is already too great. Smith looks for these rules which the individuals internalise during the process of exchange and which articulate the mercantile relationship, therefore these are the unknowns which allow us to understand the competitive market.

> But though labour be the real measure of the exchangeable value of all commodities, it is not that by which their value is commonly estimated. It is of difficult to ascertain the proportion between two different quantities of labour. (…) In exchanging, indeed, the different productions of different sorts of labour for one another, some allowance is commonly made for both. It is adjusted, however, not by any accurate measure, but by the higgling and bargaining of the market, according to that sort of rough equality which, though not exact, is sufficient for carrying on the business of common life. (Smith [1776] 1976, 48-9).

Although the exchange or market price is a direct consequence of negotiation, the fact that the agents follow the common reference is enough to guarantee the consistency of the market as a system of exchange. Therefore, we could affirm that if the individuals follow this rule when they act according to their motivation, the market would reach the same stability as a society which works with the moral rule of sympathy. The importance of a rule of

[5] Hurtado (2003) defines this market society "as a society of unknowns symmetrically placed in the market".

equivalence for all participants comes from the relationship with the formation of their expectations.

2.1. The cognitive process in the exchange

How the actors come to the exchange with a rule of equivalence that they use as their reference leads us to ask how they form their expectations. Smith introduces this idea into several aspects of his work; from his understanding of science presented in *Astronomy*, with new and extraordinary events that shake principles and provoke uncertainty and curiosity among scientists (Loasby 2002), to the insurmountable limitations of the legislator's knowledge to enable adequate market regulation — because of the diversity of individual motivations and the uncertainty of the sources of information (Schliesser 2005; Otteson 2010). Smith's recognition of the inconsistency of human nature includes the theoretician, the legislator and the individual actor. Individuals have limited rationality and, therefore, have neither an adequate understanding of economic ideas nor is their information complete.[6] In his economic theory, individuals make their decisions based on their limited ability to understand goods, capital or value.[7] Knowledge does not pertain solely to the world of scientists, but also to actors of exchange who rely on it in order to base their expectations. Within the analysis of exchange, Smith uses on various occasions "common life" to distinguish both spheres.

The introduction of money, which is required in the natural tendency for exchange, forces individuals to search for new sources of information because the facts supplied by the market are insufficient.

> The greater part of people too understands better what is meant by a quantity of a particular commodity, than by a quantity of labour. The one is a plain palpable object; the other an abstract notion, which, though it can be made sufficiently intelligible, is not altogether so natural and obvious. But when barter ceases, and money has become the common instrument of commerce, every particular commodity is more frequently exchanged for money than for any other commodity. (Smith [1776] 1976, 49).

It is not about the character of the details provided by said institution; it is about the nature of exchange. For Smith, participation in the market involves the continual search for references which permit the individual to understand the exchange. However, the current price is not the only element which provides information, but if this were so, Smith wraps the market participation in the complexity which can be caused by the use of terms such as "abstract notion", "comprehension" or "intelligible". Rosenberg (1960) previously highlighted the richness of Smith's argument, both in relation to the conflict of inertia which impulses

[6] Schliesser (2005) lists several examples: the distance created by the division of labour (Smith [1776] 1976, 14), the tendency of individuals to overestimate their own luck (Smith [1776] 1976, 124), an openness to the influence of pressure groups (Smith [1776] 1976, 84).

[7] "That indolence, which is the natural effect of the ease and security of their situation (the proprietors of land), renders them too often, not only ignorant, but incapable of that application of mind which is necessary in order to foresee and understand the consequences of any public regulation. (…) But though the interest of the labourer is strictly connected with that of the society, he is incapable either of comprehending that interest or of understanding its connection with his own. His condition leaves him no time to receive the necessary information, and his education and habits are commonly such as to render him unfit to judge even though he was fully informed." (Smith [1776] 1976, 265-6).

the action of the agent and to the impact of the institutions on action and wellbeing of the individual. In fact, Rosenberg encourages research, not only in the field of the assignation generated by the competitive process, but also the medium through which the institutions contribute to this purpose.

We consider that in WN, the formation of prices in a competitive market is based upon an institutional structure which provides the agents with the necessary instruments so that their actions guarantee exchange. Once the introduction of currency had overcome the obstacles which the development of a mercantile society implies for the natural tendency of individuals towards exchange, Smith required that institutions provide the necessary information so that the agents could determine a necessary reference.

> As it rarely happens that these are exactly agreeable to their standard, the merchant adjusts the price of his goods, as well as he can, not to what those weights and measures ought to be, but to what, upon an average, he finds by experience they actually are. In consequence of a like disorder in the coin the price of goods comes, in the same manner, to be adjusted, not to the quantity of pure gold or silver which the coin ought to contain, but to that which, upon an average, it is found by experience, it actually does contain. (Smith [1776] 1976, 63).

The predictability of behaviour is associated to the specifications of the institutional framework.[8] In the case of competitive exchange, Smith requires that institutions contribute to form expectations with a high degree of probability of concretion with respect to the rest of their plans. This measurement is the natural price.

2.2. Natural prices

The reasons debated in literature to explain the greater importance of natural prices in WN are diverse though linked to a reading of the labour value, or of production costs: (i) Smith sought more than to diversify market prices, he also wished to demonstrate the causes of the variations of the wealth of nations in the long term (Robertson and Tayor 1957, 193); (ii) due to the lack of the concept of marginal productivity, Smith has no other way of linking distribution and value which unite a theory of production costs, that is to say, with the natural price (O'Brien 1975, 116); (iii) the natural price is the consequence of the new concept of capital exposed by Adam Smith (Meek 1773, 24); (iv) the theory of natural price is general compared to the special situation of a unique factor (labour), where the labour theory of value was sufficient (Bowley 1973, 112). However, on the one hand, the absence of a theory of production, in the sense of disconnection between ownership and technological change, and the inconsistency throughout WN[9] and even within chapter VII itself,[10] shows that

[8] Rosenberg (1960) considers that expected behaviour of Smithian agents depends on the structure of the institutions. The more specified the institutions, the more predictable their actions. He describes various examples of expected behaviour from the agents, given the tendency and motivations that Smith accords to individuals, based on the structure of the institutions around them.

[9] Firstly, the increase in productivity through the division of labour in WN prevents the natural price being determined exclusively by production conditions (see Negishi 2000). Secondly, the increase in prices in relation to wages (through greater use of capital and land) in an advanced society is inconsistent with the Smithian correspondence between abundance and low prices (see Hurtado 2003, 27).

it is inadvisable to read Smith's theory of price from the point of view of production costs. Social change, generated by a distinct subsistence mode and which supposes private property, does not carry a technological change[11], in such a way that land, labour and capital are not production factors but remuneration for the owners of the resources which participate in the productive process (Brown 1998, 169). On the other hand, the concept known as long-term which forms part of a tradition generated in the literature is absent from Smith's theory of prices. The natural prices do not even correspond to the average price obtained by sufficient repetitions of the transactions over time —in Smith, expectations are not formed on the basis of experience, because if this were so, the natural price would be determined during the exchange rather than outside it.

One alternative is to approach the formation of Smith's prices from the theory of components, where the natural price is seen as a number of parts corresponding to payments (Cartelier 1976; Brown 1998). The problem is then transferred to distribution, and it is necessary to determine the rate of profit, wages or rent and it is here that this interpretation encounters more obstacles, since these natural rates cannot be explained.[12] Without knowing these payments, natural price would have to be determined in the exchange itself; which is impossible, because effectual demand depends on the natural price (Cartelier 1976, 143). Even if natural rates were set exogenously, Arena, Froeschle and Torre (1988) demonstrate the necessity of an analysis which goes beyond a "general equilibrium of prices" to assure the coincidence between the natural price and the market price.[13] A components theory appears to be a suitable reading for understanding Smith's process of price formation but it is necessary to go further. When Smith addresses exchange, the issue examined is more specific and direct than distribution or the formation of wealth.

Adam Smith defines natural price as an aggregation of the retribution expected by each participant in the production process measured in current rates (rent from land, wage from labour and profit from capital). Unlike the approach of production costs, employed by A.-R.-J. Turgot in his "fundamental price" or by "Richard Cantillon's intrinsic value", natural price is not the disbursement of the producer but a value which is expected to be countersigned by exchange and conformed by profit, wage and income from land. All of these are *expected* payments and not actually realised. The process of competitive exchange proposed by Smith does not modify the natural prices.

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[10] There is no discussion in WN about the variability in the proportions between factors that allow constant returns to scale (Arena et al. 1988). Moreover, the natural prices cannot be considered as an evaluation of the production cost because payment is made after the exchange (Benetti 1981, 13).

[11] Technological change only occurs as a result of the division of labour. The well-known passages of the first book of the WN describe the increase in productivity as the division of labour becomes deeper (see Negishi 2000).

[12] Although Smith believes that the natural wage rate is determined by the minimum subsistence with perfectly substitutive employments (the uniform wage structure), it is not clear how the rate of profit or rent is determined (see Schliesser 2005).

[13] They believe that the analysis of convergence in Smith that uses production prices is inadequate and requires closer analysis, (i) using a model that considers different hypotheses of returns to scale, (ii) taking a disequilibrium approach using, for example, a Sraffian framework, or even (iii) substituting the hypothesis of perfect competition with that of imperfect competition or even oligopoly (Arena et al. 1988, 1114).

These retributions are necessary elements for Adam Smith's empirical methodology since his conclusions are only valid in terms of observation and reasoning based on data. However the author adds another consideration: "These ordinary or average rates may be called the natural rates of wages, profit, and rent, at the time and place in which they commonly prevail." (Smith [1776] 1976, 72).[14] The consideration of naturals, as defined previously to market price, shows their importance in exchange in two ways. On the one hand, being a price determined independently from the mechanism of supply and demand, the competitive exchange proposed by Smith supposes that the system of relative prices is not sufficient to guarantee its consistency. On the other hand and as a consequence of the former in Adam Smith's project, the market price must be completed with a set of rules or equivalence systems which permit the formation of expectations with a high degree of probability of concretion with respect to the rest of the plans.

Each of the natural rates that comprise the natural price will have a constant structure which "prevails", in Smith's words, in a particular time and space, and this gives uniformity to the different employments (Smith [1776] 1976, 80). However, Smith is not equally clear about the how the causal structures are established that comprise the actors' possible conditions. Individuals have some understanding of their activity and therefore knowledge of the conditions in which their proposed actions would be possible. But the structures that facilitate their intended actions are not always clearly identified in WN.[15]

The natural price is known by all participants in the exchange because the institutions lead the individual estimates of the rates which compose the natural price (wage, rent and profit) towards the prevailing levels and which therefore will be used as the reference point.

Smith considers that the easiest natural rate for the agents to estimate is average land rent. Information on rents for purpose means that public registers provide all the necessary information regarding the cost of agricultural land in every place (Smith [1776] 1976, 228-40). Within the framework of agricultural taxation, Smith explains how the actors are able to estimate the average land rent in every place.

The natural wage rate is clearly defined as the minimum amount required to maintain the labourers. This subsistence level is determined by Smith's understanding of necessities.

> By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without. A linen shirt, for example, is, strictly speaking, not a necessary of life. (…) Under necessaries, therefore, I comprehend not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people. All other things I call luxuries… (Smith [1776] 1976, 870).

The subsistence wage has both a biological and a community-based component (Stabile 1997). Beyond the desire for social approbation, Smith links the setting of the natural salary to a subsistence level that is influenced by social institutions and therefore, dependent on

[14] On the uses of average, usual and ordinary in WN, see Aspromourgos (2007: 30-2).

[15] This creates problems of interpretation. For example, Bowley (1972) considered there are employments where the natural price is known by all the actors and is set by the economy's "macro-growth parameters".

time and place. Referring to the proportion put forward by Richard Cantillon,[16] Smith links the subsistence/natural wage relationship to time or the type of activity, which the actor knows and which does not have to be scientifically determined, as it is part of the "common life" and not scientific reality.

> Thus far at least seems certain, that in order to bring up a family, the labour of the husband and wife together must, even in the lowest species of common labour, be able to earn something more than what is precisely necessary for their own maintenance; but in what proportion, whether in that above mentioned, or in any other, I shall not take upon me to determine.
> (Smith [1776] 1976, 85-6).

In each place, the level required to satisfy the basic necessities will be used as the reference when expectations regarding wages are being formed, but the subsistence method is never a determinant in this cognitive process. Quite the reverse; in WN salary is the motive for the subsistence method and allows, for example, a consumption pattern based on cereal (England), where the wage is high, or in oats (Scotland), where the wage is lower (Smith [1776] 1976, 85-6). Smith abandons the impact of the subsistence method on the general makeup of society — common in the Scottish historical school and proposed in his consumption theory in *Lectures on Jurisprudence* — thereby eliminating any direct influence of demand on the determination of the natural price.[17]

Smith believes that the natural level of profit is the process that is most complex for the agent to determine. The profit must be an income that is linked solely to the use of capital in the production process (Meek 1973, 24). On the one hand, capital is clearly distinguished from money and its other passive uses (land hire or loans with interest). On the other hand, profit is a reward that is unique and exclusive to capital, which leaves the wage as the payment for every productive task, regardless of its type.

> The profits of stock, it may perhaps be thought are only a different name for the wages of a particular sort of labour, the labour of inspection and direction. They are, however, altogether different, are regulated by quite different principles, and bear no proportion to the quantity, the hardship, or the ingenuity of this supposed labour of inspection and direction. They are regulated altogether by the value of the stock employed, and are greater or smaller in proportion to the value of this stock. (Smith [1776] 1976, 66).

There is none of the potential confusion described by Schliesser (2005) regarding profit on the flow or the stock of capital. Smith is clear in his concept of profit as a regular proportion to the amount of capital since he describes the need to disassociate it from a profit in terms of mark-up of earlier authors (Meek 1967, 8). The nature of capital as a necessary precursor to the productive process places the determination of profit at the moment that the income is received, which should not be confused with a mark-up over cost. As we shall see, all

[16] "Mr Cantillon seems, upon this account, to suppose that the lowest species of common labourers must everywhere earn at least double their own maintenance, in order that one with another they may be enabled to bring up two children." (Smith [1776] 1976, 85).

[17] Meek (1973) maintains that the treatment of individual preferences is judged by Smith as a subject to be considered through the theory of moral sentiments rather than a theory regarding the cause of the wealth of nations.

payments in Smith's gravitation, not just profit, are in fact ultimately realised through exchange.

> His profit, besides, is his revenue, the proper fund of his subsistence. As, while he is preparing and bringing the goods to market, he advances to his workmen their wages, or their subsistence; so he advances to himself, in the same manner, his own subsistence, which is generally suitable to the profit which he may reasonably expect from the sale of his goods. (Smith [1776] 1976, 73).

With David Hume and A.-R.-J. Turgot, Smith presents the type of interest as an indirect reference for average rate of profit.[18] He considers that individuals form their expectations from the average profit of stock based on the cost of money. He links both variables by a maxim which individuals use as a reference:

> But though it may be impossible to determine, with any degree of precision, what are or were the average profits of stock, either in the present or in ancient times, some notion may be formed of them from the interest of money. It may be laid down as a maxim, that wherever a great deal can be made by the use of money, a great deal will commonly be given for the use of it; and that wherever little can be made by it, less will commonly be given for it. (Smith [1776] 1976, 105).

As we have seen, the actors come to the exchange with rates that make up the natural price, which have been determined previously through institutions that do not form part of the market. It is a rule of equivalence that they use as their reference and the basis of their expectations. This point opens chapter VII of WN.

3. Competitive exchange

Natural price forms a pillar to support the construction of a spontaneous order which consists in a set of plans founded in expectations. This order requires a mechanism that corrects, by itself, the discrepancies in the different plans in a process which Smith likens to gravity.[19] This is the content of chapter VII of WN; the majority being the treatment of the problems raised by the absence of correspondence between the result of the exchange, known as market price, and the magnitude of the reference, known as natural price.[20] Although Smith employs this mechanism to explain price stability, this is not a characteristic

[18] Smith estimated that in his time the type of interest represented half of the level of profit (Schliesser 2004, 39).

[19] Smith's use of "gravitating" raises doubts about the concept (gravitating or gravity) to which he refers. Adam Smith was familiar with Newton's theory of gravitation (see "The History of Astronomy" in *Essays on Philosophical Subjects*) and the need for the mutual and simultaneous attraction of both bodies. Given that the market price does not attract the natural price, it is possible that Smith is referring to "gravity", i.e. the force by which bodies are attracted towards the centre of the earth by the simultaneous operation of the force of gravity, centrifugal force and Coriolis' force. For the various uses of gravitation, see D'Orlando (2007).

[20] This is not the only formalisation of exchange in Adam Smith's work, nor is it the only one describing the relationship between market price and the natural price. Meek (1973) presents the model of price determination in *Lectures on Jurisprudence* as a forerunner of that set out in WN, although with such fundamental differences (it lacks concept of capital and includes a consumption theory), that they are viewed as two separate models. On the other hand, Bowley (1973) finds sufficient similarities to believe that the suggestion made in *Lectures on Jurisprudence* is consistent with WN, to the point of proposing the latter as a generalisation of the former.

of the dynamic behaviour of this theoretical model which we know as gravitation.[21] But neither is it a model for determining magnitudes (prices of goods and factors) in the long term, which has often been likened to the Marshallian analysis (O`Brien 1989, 20; Dooley 2006, 139).[22] The competitive exchange solely determines the deviation between the actual price and the expected one, which permits the imbalances of the individual coordination plans to be corrected.

> As it is the nominal or money price of goods, therefore, which finally determines the prudence or imprudence of all purchases and sales, and thereby regulates almost the whole business of common life in which price is concerned, we cannot wonder that it should have been so much more attended to than the real price. (Smith [1776] 1976, 55).

As we have already discussed, this natural price is not the "actual" or realised price, that is to say, it is not the price for which goods are exchanged, called the market price. This latter is determined in the exchange, specifically "by the proportion between the quantity which is actually brought to market, and the demand of those who are willing to pay the natural price of the commodity".

Although demand is defined in monetary terms — i.e. effectual demand —, Smith favours real prices to explain the exchange process and abandons "Cantillon's rule" (Benetti and Cartelier 2001, 217). The transformation is made by establishing the natural price as the invariable value of the goods, so that effectual demand is not an amount of money offered to acquire merchandise on the market, but rather the quantity of merchandise desired at the expected price. Therefore, once the natural price has been set, money is no longer a condition for determining the exchange price.[23] Henderson (1954) believes that the degree of freedom that consumers can exercise is limited to negotiation within the single exchange of a commodity, with no consequences on the consumer's *ex post* decisions. This is the opposite of the utilitarian tradition, where production assumes *ex post* the consumers' *ex ante* decisions. However, there is a greater problem, because it refers to the consistency of the theoretical system. The specific problem is that the formation of exchange expectations through demand is an obstacle in Smith's analysis, in view of the fact the buyer knows the natural price of the merchandise but there is no explanation as to how this is achieved. Despite this, his role is essential in the allocation of resources, given that production always tends to satisfy effectual demand in every "society or neighbourhood", that is, the quantity governs the natural price (Bowley 1973, 124; Smith 1954).

> The quantity of every commodity which human industry can either purchase or produce naturally regulates itself in every country according to the effectual demand, or according to the demand of those who are willing to pay the whole rent, labour, and profits which must be paid in order to

[21] For that a theory would have been required that gives a precise definition of the market prices in order to describe, through the dynamic model, its movement towards a position of equilibrium.

[22] Of the three prices used by Smith, natural price is the only one which is not listed as a true measure of value. Both the real price and the market price are defined as the true value of the commodity, while the natural price is defined as simply an instrument. It is not easy, therefore, to link it to the just price or the Marshallian price.

[23] He also abandons his theory of consumption set out in *Lectures on Jurisprudence*, thereby eliminating all direct influence of demand on the determination of the rate of exchange (Meek 1973, 73).

> prepare and bring it to market. But no commodities regulate themselves more easily or more exactly according to this effectual demand than gold and silver. (Smith [1776] 1976, 435).

On the basis of natural price, the producers decide the quantity to offer and the buyers their effective demand. This initiates a competitive process, whether by reaching a limited offer, shedding an excess supply of goods, or by avoiding an exchange at any price. Competition can be described as an interdependent behaviour which does not entail only situations where, given a natural price, the quantity in the market differs from the quantity demanded.

In the event of equality between both quantities of equal value (offered and demanded at the natural price), competitive exchange keeps a single market price at the natural price.

> When the quantity brought to market is just sufficient to supply the effectual demand, and no more, the market price naturally comes to be either exactly, or as nearly as can be judged of, the same with the natural price. The whole quantity upon hand can be disposed of for this price, and cannot be disposed of for more. The competition of the different dealers obliges them all to accept of this price, but does not oblige them to accept of less. (Smith [1776] 1976, 74).

Although the existence of a negotiation process has been used to refute the existence of price-taking agents (O'Brien 1975; Stabile 1997; Aspromourgos 2007), Smith's market prices arise out of individual decisions about quantities, because prices are beyond the agents' control (Benetti and Carterlier 2001, 217). But unlike Richard Cantillon, A.-R.-J. Turgot or Sir James Steuart, Adam Smith is not interested in the exact determination of the market price, but only in the direction of the movement between this and the natural price (Arena 1979; Benetti and Cartelier 2001; Aspromourgos 2007). In this case, the agents will not see any difference between the anticipated (natural) prices and the realised (market) prices, and therefore production remains fixed to effectual demand. The correspondence between natural price and market price defines market stability.

> The whole quantity of industry annually employed in order to bring any commodity to market naturally suits itself in this manner to the effectual demand. It naturally aims at bringing always that precise quantity thither which may be sufficient to supply, and no more than supply, that demand. (Smith [1776] 1976, 75).

3.1. Gravitation

Competition reaches its maximum expression in situations where the result of the exchange (market price) does not correspond with expectations (natural price). In this case, the competition is extended from the exchange sphere to the production sphere.

The response of the producers to this imbalance is to adjust the quantities offered in the next exchange. In the case of a realised price that is lower than the expected price, the producer pays the participants in the production process at a lower rate than the natural rate, which means that all the agents bear the risk, and not only the capitalist agent.[24] Adam Smith thus changes the timescale of the production sequence of earlier theories of production

[24] "Of the five circumstances, therefore, which vary the wages of labour, two only affect the profits of stock; the agreeableness or disagreeableness of the business, and the risk or security with which it is attended" (Smith [1776] 1976, 128). This refers to an uninsurable risk premium (see O'Brien 1975, 171).

costs.[25] The employer does not pay in order to bear the risk of an exchange where the income may be lower than the costs. Smith believes that resources come into the industry according to payments made because movement between inter-industries does not occur according to the expected rewards (natural rates), but based on adjusted expectations. Given homogeneous intra-industry production process, the quantity offered will allow income, by means of the exchange, which is the payment made by the agents (employees, capitalists and landowners). When the natural price corresponds to the market price, resources are paid at the natural rates and no employment has any advantage or disadvantage to generate any kind of mobility between resources.

In the event of an exchange price that is lower than the expected price, the producer cannot keep a payment at the natural rates. This drop in the price of resources discourages its flow towards the industry, and so the suppliers will have fewer available resources. This results in there being fewer products on the market, but still at the same expected prices (natural prices). At the next exchange, the quantities on the market will be insufficient to satisfy the effectual demand and the market price will move back towards its natural level.

> If at any time it exceeds the effectual demand, some of the component parts of its prices must be paid below their natural rate. If it is rent, the interest of the landlords will immediately prompt them to withdraw a part of their land; and if it is wages or profit, the interest of the labourers in the one case, and of their employers in the other, will prompt them to withdraw a part of their labour or stock from this employment. The quantity brought to market will soon be no more than sufficient to supply the effectual demand. All the different parts of its price will rise to their natural rate, and the whole price to its natural price. (Smith [1776] 1976, 74–75).

In the opposite case —a market price that is higher than the natural price— income that is higher than the producers expected allows a payment rate higher than the natural rates. Higher retributions are an incentive for resources, as well as production within the industry, to increase in the following period. The quantity offered will once again fully satisfy the effectual demand and the market price will return to its natural level.

> If, on the contrary, the quantity brought to market should at any time fall short of the effectual demand, some of the component parts of its price must rise above their natural rate. If it is rent, the interest of all other landlords will naturally prompt them to employ more labour and stock in preparing and bringing it to market. The quantity brought thither will soon be sufficient to supply the effectual demand. All the different parts of its price will soon sink to their natural rate, and the whole price to its natural price. (Smith [1776] 1976, 75).

3.2. Market stability

Essential conditions have often been placed on the competitive exchange proposed by Adam Smith based on the neoclassical model. For example, the non-collusive action of the agents or a sufficient number of them to eliminate extraordinary profits (Stigler 1957). Nevertheless, these terms do not correspond to the system proposed in WN. In the first place,

[25] Unlike A.-R.-J. Turgot and Richard Cantillon, for Smith the advance of capital does not repay the price of the labour and refers solely to a requirement of production as the necessary subsistence for the worker. Although it is possible to use the term wage for such a recompense prior to the exchange, his reference to subsistence makes it clear that this does not refer to a production cost.

in Smithian gravitation there are no incentives to act in collusion on the basis of the free movement of resources. Secondly, the number of agents is irrelevant, as long as the quantity demanded is guaranteed.[26] And in the case of imbalance, as we have remarked a more or less eager competition depends on the extent of the excess.

Smith specifically sets out three hypotheses for the correct functioning of the gravitation system:

1. The agents possess sufficient knowledge and/or information to understand the differences between the expected and realised rates.[27]
2. There must be sufficient time to move the resources towards the desired quantities by the owners of the resources.
3. Perfect freedom is understood as the free movement of resources.

Temporary changes in productivity or effectual demand cause imbalances between the quantities offered and demanded. Gravitation will correct the price fluctuations that these disturbances cause. However, the failure to complete these conditions hinders the correspondence between the market price and the natural price, in other words, individuals are unable to correct their decisions based on market results.

> The natural price, therefore, is, as it were, the central price, to which the prices of all commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder them from settling in this centre of repose and continuance, they are constantly tending towards it. (Smith [1776] 1976, 75).

Smith gives a detailed explanation of each of these "obstacles" in the last part of chapter VII: (i) innovations, which make it impossible to achieve the first condition, (ii) the limitation of resources, which is linked to the possibility of mobility, and (iii) public monopolies, which relates to freedom of movement. Monopoly is specifically defined in this system, as an obstruction — created by certain institutions or Authority — to equality between the natural price and the market price. Monopoly is not defined according to the number of participants, but by the impossibility of entering a market where the rates of profit rise above the natural level.

[26] In Smith, both incentives to act in collusion and the number of participants are parts of other concept of exchange; the case of an exchange process on a two-fold basis, first between merchants and producers and then between consumers and merchants: "The quantity of grocery goods, for example, which can be sold in a particular town, is limited by the demand of that town and its neighbourhood. The capital, therefore, which can be employed in the grocery trade, cannot exceed what is sufficient to purchase that quantity. If this capital is divided between two different grocers, their competition will tend to make both of them sell cheaper, than if it were in the hands of one only, and if it were divided among twenty, their competition would be just so much the greater, and the chance of their combining together, in order to raise the price, just so much the less. Their competition might perhaps ruin some of themselves; but to take care of this is the business of the parties concerned, and it may safely be trusted to their discretion. It can never hurt either the consumer, or the producer; on the contrary, it must tend to make the retailers both sell cheaper and buy dearer, than if the whole trade was monopolized by one or two persons." (Smith [1776] 1976, 361-2).

[27] This does not mean perfect information, as Adam Smith reiterates the uncertain quality of the information (Smith [1776] 1976, 105, 261).

> A monopoly granted either to an individual or to a trading company has the same effect as a secret in trade or manufactures. The monopolists, by keeping the market constantly understocked, by never fully supplying the effectual demand, sell their commodities much above the natural price, and raise their emoluments, whether they consist in wages or profit, greatly above their natural rate. (Smith [1776] 1976, 78).

Although the producers may identify opportunities for profit and may be capable of mobilising resources, they cannot supply the market with the quantity that would satisfy the entire effectual demand. As in the case of commercial or industrial secrets, equality of natural price and market price is not a question of time. Authority and institutions prevent gravitation.

The spread of knowledge and/or transparency that institutions bring to the market to identify profits above the natural rate can set the process of gravitation in motion or increase its speed. Smith believes that some institutions, such as roads, bridges or canals, allow the agents to identify rates of profit above the natural rate. When functioning at their best, this would eliminate the extraordinary profits derived from privileged information, such as commercial secrets.

> If the market is at a great distance from the residence of those who supply it, they may sometimes be able to keep the secret for several years together, and may so long enjoy their extraordinary profits without any new rivals. Secrets of this kind, however, it must be acknowledged, can seldom be long kept; and the extraordinary profit can last very little longer than they are kept. (Smith [1776] 1976, 77).

Similarly, some institutions hinder the functioning of the competitive process. For example, the laws of apprenticeship, which prevent the movement of the worker and creates a disincentive to eliminate the correspondence between effort and price (Rosenberg 1960). The result of this is rates of profit and salary above their natural levels.[28]

Given these necessary conditions for the convergence process, there are some proposals that relate to the process itself and its tendencies. These could be termed critical hypotheses, given that failure to complete them would call into question the stability advocated by the model. Firstly, gravitation requires a set of rules of reference (the natural price) which allow the agents to form expectations that are more likely to be met than those that are formulated using the relative or market prices. The natural price is not an ideal concept (Ekelund and Hébert 1999, 234), nor is it an empirical price, but is the foundation for a necessary expectation for consumers and producers. Smith concludes chapter VII by underlining that the process of market price convergence is limited to a few invariable natural prices.

> This is all that I think necessary to be observed at present concerning the deviations, whether occasional or permanent, of the market price of commodities from the natural price. The natural

[28] "The exclusive privileges of corporations, statutes of apprenticeship, and all those laws which restrain, in particular employments, the competition to a smaller number than might otherwise go into them, have the same tendency, though in a less degree. They are a sort of enlarged monopolies, and may frequently, for ages together, and in whole classes of employments, keep up the market price of particular commodities above the natural price, and maintain both the wages of the labour and the profits of the stock employed about them somewhat above their natural rate." (Smith [1776] 1976, 80)

> price itself varies with the natural rate of each of its component parts, of wages, profit, and rent; and in every society this rate varies according to their circumstances, according to their riches or poverty, their advancing, stationary, or declining condition. I shall, in the four following chapters, endeavour to explain, as fully and distinctly as I can, the causes of those different variations. (Smith [1776] 1976, 80).

The natural price alters, but not in a process defined by a specific place or timescale (Smith [1776] 1976, 72). This rule of equivalence stands with the alternatives put forward by Arena, Froeschle and Torre (1998) in an attempt to address the shortcomings of the approach taken in the "classical theory of general economic equilibrium".

Secondly, gravitation requires the law of one price to be fulfilled. In the case of excess supply, different market prices might allow both a producer to pay below the natural rates for the resources and another one to pay at the natural rate. Given that resources are limited and that merchandise can be perfectly substituted, the latter producer could draw together all of the resources of that industry. Gravitation process never begins because different remunerations intra-industry to the same factor does not change the total quantity brought to market in the following period but a reallocation of factors.

Thirdly, this price mechanism involves a set of conditions relating to the use of the resources. Smith requires the employment to be stable and the employees should work full-time.

> THE whole of the advantages and disadvantages of the different employments of labour and stock must, in the same neighbourhood, be either perfectly equal or continually tending to equality (…) In order, however, that this equality may take place in the whole of their advantages or disadvantages, three things are requisite even where there is the most perfect freedom. First, the employments must be well known and long established in the neighbourhood; secondly, they must be in their ordinary, or what may be called their natural state; and, thirdly, they must be the sole or principal employments of those who occupy them. (Smith [1776] 1976, 116-132).

Stability becomes a guarantee for the movement of resources. The capital and the labour do not only move according to payment; the background of the employment is also important. For Smith, therefore, part-time job discourages the movement of resources and hinders the convergence of prices and payments. On the other hand, multiple employment allows the workers to bear, in some of their positions, payments that are lower than the natural wage, without it resulting in the required mobility.

Fourthly, gravitation requires that disturbances of demand should occur in many industries and to be opposing. An increase in demand in one industry must coincide with a reduction in demand in another industry, for resources to move from the less well paid to the better-paid industry.

> A public mourning raises the price of black cloth (with which the market is almost always understocked upon such occasions), and augments the profits of the merchants who possess any considerable quantity of it. It has no effect upon the wages of the weavers. The market is understocked with commodities, not with labour; with work done, not with work to be done. It raises the wages of journeymen tailors. The market is here understocked with labour. There is an effectual demand for more labour, for more work to be done than can be had. It sinks the price of coloured silks and cloths, and thereby reduces the profits of the merchants who have any

> considerable quantity of them upon hand. It sinks, too, the wages of the workmen employed in preparing such commodities, for which all demand is stopped for six months, perhaps for a twelvemonth. The market is here over-stocked both with commodities and with labour.
>
> (Smith [1776] 1976, 75).

If this were not the case, gravitation would require temporary unemployment or over-employment. When a change in the natural price is contemplated, new divisions of labour and/or new improvements in the process —both caused by competition— are able to satisfy an increase in the effectual demand (Smith [1776] 1976, 748). However, as Adam Smith underlines in the last paragraph of chapter VII of WN, how natural price varies is the question for the "following chapters".

4. Conclusion

The recent literature that has been produced in response to the examples of infringements of the expected utility theory (Starmer 2000; Birnbaum 2004), has turned our attention back to authors who, in their day, attempted to explain the decisions of exchange from a viewpoint other than utility. It is well known that Adam Smith rejected this tradition that had been espoused by his teacher Francis Hutcheson (Robertson and Taylor 1957; Skinner 1995), but not his alternative proposal. In many instances, the reading of WN has been too "normative", in the sense of looking for what Adam Smith should say or should have said, instead of investigating what Adam Smith actually did say.

The context of this work is the literature that gives priority to close attention to the language, its use and the context of Adam Smith. Specifically, we have investigated his theory of competitive exchange described in WN. We have discovered some hypotheses and principles of behaviour that are very different to those traditionally described in the literature. These are principally the leading role of the cognitive process in the exchange process, of decision-making based on expectations and institutions. The conclusions that we have reached are, firstly, that natural price is a rule of equivalence that guarantees market consistency. Secondly, the cognitive process that allows individuals to determine natural rates is described as a mechanism for forming expectations based on institutions that are outside the market. Finally, the hypotheses of price convergence used in the literature have been redefined, taking into account the mechanism, formulated by Adam Smith, of the tendency of prices to gravitate towards their natural levels.

References

Arena, Richard (1979). "Note sur la conception classique de la concurrence". *Cahier d'Économie Politique*, 5: 119-148.

Arena, Richard, Froeschle, Claude & Torre, Dominique (1988). "Formation des prix et équilibre classique. Un examen prèliminaire", *Revue economique*, 6: 1097-1117.

Aspromourgos, Tony (1996): *On the origin of classical economics*. London: Routledge.

Aspromourgos, Tony (2007): "Adam Smith's Treatment of Market Price and their Relation to «Supply» and «Demand»". *History of Economic Ideas*, 15(3): 27-58.

Benetti, Carlo (1981). "La question de la gravitation des prix de marché dans La Richesse de Nations". Cahier d'Économie Politique, 6: 9-31.

Benetti, Carlo & Cartelier, Jean (2001), "Money and price theory", International Journal of Applied Economics and Econometrics, 9 (2), pp. 203-223.

Berthoud, Arnaud (2002), *Essais de philosophie économique. Platon. Aristote, Hobbes, A. Smith*. Lille: Press Universitaire de Septentrion.

Birnbaum, Michael H. (2004). "Tests of rank-dependent utility and cumulative prospect theory in gambles represented by natural frequencies: Effects of format, event framing, and branch splitting", *Organizational Behavior and Human Decision Processes*, 95: 40-65.

Bowley, Marian (1973), *Studies in the History of Economic Theory before 1870*. Bristol: Macmillan.

Brown, Vivienne 1998. *Adam Smith's Discourse. Canonicity, Commerce and Conscience*. New York: Routledge.

Cartelier, Jean (1976). *Surproduit et reproduction: la formation de l'économie politique* Grenoble: Press Universitaire de Grenoble.

Dooley, Peter C. (2005). *The labour theory of value*. New York: Routledge.

D'Orlando, Fabio (2007). "A methodological note on long-period positions", *Contribution to Political Economy*, 26: 17-26.

Ekelund, Robert B. and Hébert, Robert F. (1999). The Dupuit–Marshall Theory of Competitive Equilibrium, *Economica*, 66 (262): 225–240.

Heilbroner, Robert (1982), "The socialization of the individual in Adam Smith", *History of Political Economy*, 14 (3): 425-439.

Henderson, John P. (1954). "The Macro and Micro Aspects of the Wealth of Nations", *Southern Economic Journal*, 21 (1): 25-35.

Hollander, Samuel (1987). *Classical economics*. Oxford: Basic Blackwell.

Hurtado, Jimena (2003). "La teoría del valor de Adam Smith: La cuestión de los precios naturales y sus interpretaciones", *Cuadernos de Economía*, 22(38): 15-45.

Loasby Brian J. (2002), "Content and method: an epistemic perspective on some historical episodes", *European Journal of the History of Economic Thought*, 9(1): 72-95.

McCloskey, Deirdre *(2008),* "The Last of the Former Virtue Ethicists", *History of Political Economy*, 40(1):43-71.

Meek, Ronald L. (1967). *Economic and Ideology and the others Essays*. London: Chapmand and Hall.

Meek, Ronald L. (1973). *Studies in the labour theory of value*. London: Lawrence & Wishart.

Muller, Jerry Z. (1993), *Adam Smith in His Time and Ours*. Princeton: Princeton University Press

Negishi, Takashi (2000). "Adam Smith's division of labor and structural change", *Structural Change and Economic Dynamics*, 11: 5-11.

O'Brien, Denis P. (1975), *The Classical Economists*. Oxford: Clarendon Press.

Otteson, James R. (2010), "Adam Smith and the Great Mind Fallacy", *Social Philosophy and Policy*, 27 (1): 276-304.

Peil, Jan (2009), "Adam Smith". In Jan Peil and Irene van Staveren (eds), *Handbook of economics and ethics*. Cheltenham, UK: Edward Elgar: 531–538.

Raines, J.P. and Leathers, C.G. (2008) Adam Smith on Religion and Market Structure: The Search for Consistency, *History of Political Economy,* 40(2), 345-363

Robertson, H. M. & Taylor, W. L. (1957): "Adam Smith's Approach to the Theory of Value", *The Economic Journal*, 67(266): 181-198.

Ron, Amit (2008), "Modern Natural Law Meets the Market: The Case of Adam", *European Journal of Political Theory*, 7: 117-136.

Rosenberg, Nathan (1960). Some institutional aspects of the wealth of nations. *Journal of Political Economy*, 68: 557–570.

Schumpeter, J. A. (1954). *History of economic anylysis*. New York: Oxford University Press.

Schliesser, Eric (2005), "Some principles of Adam Smith's newtonian methods in the Wealth of Nations", *Research in the History of Economic Thought and Methodology*, 23: 33–74.

Skinner, Andrew. S. (1995), "Pufendorf, Hutcheson, and Adam Smith: Some Principles of Political Economy", *Scottish Journal of Political Economy,* 42: 165-82.

Smith, Victor E. (1951). "The Classicists' Use of "Demand", *Journal of Political Economy*, 59(3): 242-257.

Smith, A. (1762-6). *Lectures on Jurisprudente*. R.L. Meek, D.D. Raphael & P.G. Stein (Eds), Indianapolis: Liberty Fund, 1982.

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. R. H. Campbell, A. S. Skinner & W. B. Todd (Eds), Indianapolis: Liberty Fund, 1984.

Stabile, Donald R. (1997)."Adam Smith and the Natural Wage: Sympathy, Subsistence and Social Distance". *Review of Social Economy*, 55(3): 392-312.

Starmer, Chris (2000), “Developments in non-expected utility theory: The hunt for a descriptive theory of choice under risk”, *Journal of Economic Literature*, 38: 332–382.

Stigler, George J. (1957), “Perfect Competition, Historically Contemplated”, *Journal of Political Economy*, 65(1): 1-17.

Tajima, Keigo (2007), “The theory of institutions and collective action in Adam Smith’s *Theory of Moral Sentiments”, The Journal of Socio-Economics*, 36: 578–594

Tribe, Keith (1999), “Adam Smith: Critical Theorist?”, *Journal of Economic Literature*, 37(2): 609-632.

Witztum, Amos (2008), “Smith’s theory of actions and the moral significance of unintended consequences”, *European Journal of the History of Economic Thought*, 15(3): 401–432.

Young, Jeffrey. T. (1985), "Natural Price and the Impartial Spectator: A New Perspective on Adam Smith as a Social Economist", *International Journal of Social Economics*, 12(6-7): 118-133.